Prime Minister stressed the need of harnessing of non-conventional energy sources so that the requirements of energy are met to the extent possible without adding to the pollution.

(b) and (c) Yes, Sir. Government have been receiving letters including those from Members of Parliament regarding use of alcohol in Petrol. Articles have also appeared on the subject. The technological feasibilitiy of using alcohol in partial substitution of petrol and diesel as automotive fuel exists. However extensive use of alcohol requires its availability on a sustained basis.

A project entitled "alcohol fuel substitution in automobile fleets monitoring-demonstration trials" is currently under implementation for demonstrating use of 10% anhydrous denatured ethanol blended with 90% petrol for use in cars/jeeps. Delhi administration and Indian Oil Corporation are cooperating with IIT Delhi for smooth conduct of this experiment and demonstration. Basic infrastructure for storage and mixing of petrol with denatured ethanol has been set up at petrol filling station of Delhi Administration at Mall Road, Delhi. Field trials are expected to commence soon. Oil Coordination Committee under Ministry of Petroleum & Natural Gas is at present preparing a report on the use of petrol blended with 3% Methanol.

The Ministry of Non-Conventional Energy Sources under its programme on Alternate Fuels for Surface Transportation has already conducted two trial operations and demonstration on use of ethanol and methanol in diesel buses of the Delhi Transport Corporation achieving about 14 percent diesel replacement and about 30 per cent reduction in smoke emission.

Projects for renewable sources of energy

3745. SHRI JAGMOHAN: Will the PRIME MINISTER be pleased to state:

(a) what experimental projects are in hand to make use of renewable sources of energy in the coastal areas and hilly regions of the country; and

(b) if so, what are the details thereof and what results have been achieved, so far?

THE MINISTER OF STATE OF THE MINISTRY OF PLANNING AND PROGRAMME IMPLEMENTATION AND MINISTER OF STATE IN THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES (SHRI SUKH RAM): (a) and (b) The Ministry of Non-Conventional Energy Sources is developing and popularising various programmes of new and renewable sources of energy including in the coastal areas and hilly regions of the country. Popularisation of biogas, improved chulha and solar cooker is being taken up in meeting cooking energy requirement. Solar photovoltaic systems, wind pumps, biomass gasifiers and small hydel projects are being taken up for meeting the needs for lighting, water pumping and electrical energy. Solar thermal systems are also installed for meeting water heating requirements. Status of achievement of various systems and devices installed in the country is given at Statement. (*See* below)

Under the small hydro development programme of the Ministry of Non-Conventional Energy Sources 9 projects in the hilly region of the State Uttar Pradesh and 8 projects in the State of Arunachal Pradesh are presently under implementation. There are no mini-hydel projects in coastal areas. In Manikaran, district Kullu of the State of Himachal Pradesh two experimental projects, based on utilisation of geothermal energy, have been completed. Another two projects for assessment of geothermal energy and

mushroom cultivation & poultry farming, utilising geothermal fluid, are under implementation in Puga Valley, district Ladakh in the State of Jammu & Kashmir.

A 150 KW experiemental wave power plant at Vizhinjam, Kerala was set up and production of electricity has been successfully demonstrated. Refining of technology is presently in progress. Under the wind energy programme wind farms of aggregated capacity of 19.6 MW have been installed in the coastal areas of the country for generation of power.

Under the biomass gasification programme, an experimental project has been taken up in a few villages of hilly region of Pauri Garhwal in the State of Uttar Pradesh for the development and demonstration of application package around gasifier system using a locally available shrub, Lantana-Camara, as feed material for providing electricity to community/domestic lighting and cottage industries. The Biomass Research Centre at Bhubaneswar (Orissa) and Biomass Research Centre, Srinagar (U.P) has been established to increase the productivity of fast growing fuelwood species, develop suitable methodologies and to prepare package of practices suitable for plantation for East-Coast plain and hilly region and western Himalayan region respectively.

Statement

Status of systems & devices installed in the country

Sl. No.	Programme	Units	Cumulative Achievement upto 31.8.92
1	2	3	4
1.	Family size bilgas plants	Nos. in lakh	16.16
2.	Community/ Institutional Biogas Plants	Nos.	82.0
3.	Improved Chulhas	Nos. in lakh	127.56
4.	Domestic Solar Water Heating Systems	Nos.	10.292
5.	Industrial Solar Water Heating Systems	Nos.	4.907
6.	Solar Stills	Nos.	9.783
7.	Solar Timber Kilns	Nos.	71
8.	Solar Air heaters	Nos.	61
9.	Solar Cookers	Nos.	2,27,483
10.	Village provided with Photovoltaic street lights	Nos.	8,394
11	Photovoltaic Water Pumps	Nos.	741
12.	Photovoltaic Power Units	KWp	316.9
13.	Photovoltaic Community lights/ TV and community facilities	Nos.	719
14.	Photovoltaitc Domestic lighting units	Nos.	11,430
15.	Photovoltaic Street Lights	Nos.	28,887
16.	Wind Pumps	Nos.	2,922
17.	Wind Fans	MW	42.97
18.	Mini-Micro Hydro	MW	86.44
19.	Urjagram Energy Surveys	Nos.	1,622
20.	Urjagram Projects	Nos.	168
21.	Biomass Energy Plantations	Hectares	17,110
22.	Biomass Gasifiers/ Stirling Engines	Nos.	1,040

Decision taken at the second conference of Ministers of Non-Conventional Energy

3746. SHRI T.A. MOHAMMED SAQHY:
SHRI V. GOPALSAMY:

Will the PRIME MINISTER be pleased to state:

(a) what decisions were taken in the second conference of the Ministers' Incharge of Non-Conventional Energy;

(b) whether new technology has been developed to produce solar energy;

(c) what steps are being taken to achieve the target of additional power generation from non-conventional energy sources during the Eighth Five Year Plan; and